

# Section 6

*While Passaic County's pre-disaster economy was moderately healthy, the county's unemployment rate is higher than the average for the State of New Jersey and projected growth is expected to lag behind the rest of the State. Forty-five businesses in Passaic County received major damage from Hurricane Floyd, 192 received minor damage, and 236 were affected.*

*Passaic County communities studied in detail were Passaic and Paterson. In these communities, direct losses to revenue, payroll, and structural property were negligible compared to annual averages. Long-term losses in the manufacturing sector, however, could be more substantial.*

*The City of Passaic should work with the State of New Jersey and FEMA to develop a local recovery strategy and implement disaster-resistant development not only to aid businesses damaged by flooding but also to strengthen the local economy.*

*The City of Paterson should consider disaster-resistant development and flood mitigation measures best suited to the city.*

## 6.1 Pre-Disaster Conditions

### 6.1.1 Primary Industries and Employment

Passaic County, which includes the Cities of Passaic and Paterson, is New Jersey's fourth smallest county in area, but the ninth largest in population. Average 1998 unemployment for Passaic County was 5.8 percent, which is greater than the State's 4.6 percent figure. Unemployment for Passaic and Paterson was 9.0 percent and 9.1 percent, respectively. Passaic County's 1997 per capita income was \$25,560. Like the rest of New Jersey, Passaic County is undergoing a transition from a manufacturing-based economy to a service-based economy. However, economic growth in the county is expected to lag behind the rest of the State due to the current and historical importance of manufacturing.

Passaic County's primary industries are in the service and manufacturing sectors, based upon the number of employed individuals (see Table 6-1). Service and manufacturing sectors account

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**Table 6-1 Primary Industries in Passaic County (1996)**

Sector	Number of Establishments	Number Employed
Agriculture, Forestry, and Fishing	222	565
Mining	4	76
Construction	1,308	7,047
Manufacturing	1,076	41,438
Transportation & Public Utilities	496	5,972
Wholesale Trade	1,146	14,798
Retail Trade	2,646	32,439
FIRE	801	10,647
Services	4,100	48,164
Unclassified	38	50
Total	11,837	161,196

Source: U.S. Bureau of the Census

for 30 percent and 26 percent of employed persons, respectively. From 1996 to 2006, employment in the service sector is expected to increase substantially at an annual rate of 1.9 percent. Employment in manufacturing and FIRE sectors is expected to decrease at an annual rate of 1.2 percent and 0.5, respectively.

The City of Passaic is the county's third largest city, with a labor force of 28,206. Manufacturing and health care are the city's largest employment sectors, each providing 30 percent of the job base. Retail/office and government are the other two main employment sectors, each accounting for 20 percent of total employment. Businesses in the City of Passaic employed 15,786 people in 1996. The U.S. Census Bureau reported that the 1996 annual payroll for the 1,011 businesses located in the city was \$414 million. Annual revenue for city businesses in 1992 was \$624 million for the 573 businesses evaluated (including only the services, wholesale trade, and retail trade sectors). The City of Passaic's largest employers are listed in Table 6-2. Commercial and industrial property values in Passaic were determined from assessed values for a total business property market value of \$390 million.

Paterson is Passaic County's largest city, with a labor force of 66,720. Paterson's businesses employed 29,454 people in 1996. The U.S.

**Table 6-2 Major Businesses in the City of Passaic**

Major Employers	Industry Sector	Number Employed
General Hospital Center at Passaic, Inc.	Services	1450
Saint Marys Hospital, Inc.	Services	900
Beth Israel Hospital Association, Inc.	Services	650
Gremac, Inc.	Manufacturing	583
Melard Manufacturing Corporation	Manufacturing	430
North Jersey Newspaper Company	Manufacturing	350
The Screen Place, Inc.	Manufacturing	200
Green Tree Packing Company, Inc.	Wholesale Trade	200
Graham-Field Health Products, Inc.	Manufacturing	180
Grossman M & Son, Inc.	Manufacturing	175

Source: Dun and Bradstreet, October 1999

Census Bureau reported the 1996 annual payroll for the 2,155 businesses located in the city was \$878 million. Annual revenue for city businesses in 1992 was \$1.73 billion for the 1,250 businesses assessed (including only the services, wholesale trade, and retail trade sectors). Paterson's largest employers are listed in Table 6-3. Commercial and industrial property values in the city were determined from assessed values for a total business property market value of \$822 million.

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**Table 6-3 Major Businesses in the City of Paterson**

Major Employers	Industry Sector	Number Employed
Saint Joseph's Hospital & Medical Center, Inc.	Services	3,155
United States Postal Service	Transportation & Public Utilities	954
Barnert Hospital, Inc.	Services	840
Passaic County Board of Social Services, Inc.	Services	645
County of Passaic Government Office	FIRE	500
Visiting Homemaker Service of Passaic County, Inc.	Services	375
Thermwell Products Company, Inc.	Manufacturing	325
Okonite Company, Inc.	Manufacturing	255
C.N. Burman Manufacturing Company	Manufacturing	250
Al & John, Inc.	Manufacturing	220

Source: Dun and Bradstreet, October 1999

### 6.1.2 Historic Flooding and Past Studies

The City of Passaic is located in the lower valley of the Passaic River basin. The Passaic River forms the entire eastern boundary of the city. Passaic's northeast corner is crossed by Weasel Brook and MacDonald Brook runs from west to east in the southern section of the city. Commercial and industrial floodplain areas are located primarily along the Passaic River and Weasel Brook.

The City of Paterson is located upstream of the City of Passaic in the lower valley of the Passaic River basin. The Passaic River runs a loop around Paterson. A significant feature of the Passaic River within Paterson is the Great Falls. Historically, industrial development was centered along the Passaic River where hydropower was plentiful. Most commercial and residential development has been located on higher ground away from the river. Two tributaries to the Passaic River enter just upstream of the Great Falls. These tributaries, Molly Ann Brook and Slippery Rock Brook, also cause flood problems within Paterson.

The Passaic River and its tributaries have a long history of flooding dating back to the early 1800's. The worst flood of record for most of the basin was a 1903 storm, while the flood of July 1945 produced record stages on some tributaries. Other large floods in the Passaic

River basin include the 1936 flood and the 1902 flood, which is the second largest on record with a peak flow of 25,000 cubic feet per second (cfs). Major recent floods include May 1968, November 1977, and April 1984.

USACE has estimated average flood damages within the Passaic River Basin to be in excess of \$116 million annually. The high level of recurring damages has prompted extensive study of flooding and flood mitigation strategies along the Passaic River and all of its tributaries. In September 1995, the New York District of USACE issued a General Design Memorandum to address flooding throughout the entire Passaic River Basin. The Passaic River Flood Damage Reduction Project is proposed to consist of a large underground diversion tunnel system, supplemented with levees, floodwalls, channel modifications, and preservation of natural storage areas. The Passaic River Flood Damage Reduction Project is controversial due to associated environmental impacts and disagreements over appropriate flood damage reduction strategies, and the future of the project is uncertain. To date, the State of New Jersey has requested that USACE only proceed with two elements of the project authorized by the U.S. Congress: the preservation of natural flood storage areas and the first phase of the stream bank restoration element in the city of Newark, New Jersey.

Flood relief along Molly Ann Brook was the subject of the Hillcrest Flood Relief Project that Paterson built in 1957. The project consisted of a number of relief sewers to collect flood flows and convey them directly to the Passaic River. USACE has also studied Molly Ann Brook extensively. As a result, USACE and the State of New Jersey joined together in the construction of the Molly Ann Brook Flood Relief Project, which is still ongoing.

## 6.2 Post-Disaster Conditions

Passaic County losses from Hurricane Floyd included 45 businesses that received major damage, 192 that received minor damage, and 236 businesses that were affected. Passaic County's EMC estimated total business losses at approximately \$14 million and disaster-related unemployment at 100. In addition to Passaic and Paterson, Little Falls and Clifton were identified as having sustained losses to their business communities.

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In Passaic County, 498 businesses had teleregistered with FEMA as of November 1, 1999. As of January 13, 2000, 44 Passaic County businesses were approved for physical loans with SBA. The total value of these loans was \$3.9 million. The SBA approved economic injury loans for 34 businesses for a total of \$1.2 million.

Hurricane Floyd caused moderate to severe flooding in Passaic and Paterson. The USGS gage on the Passaic River at Little Falls, approximately 2.7 miles upstream of Paterson, recorded a peak flow of 11,900 cfs with an estimated recurrence frequency of approximately 8 years. As a comparison, the flood of record along this section of the Passaic River occurred on October 10, 1903; it had a flow of 31,700 cfs. However, flooding within both cities appears to be more severe than what would be anticipated based upon available preliminary stream gage data.

### **The City of Passaic**

Fifteen businesses in the City of Passaic received minor damage and 25 additional businesses were affected. Total losses to businesses were \$300,000. A subsequent interview with the City of Passaic's Community Development Director revealed that 20 of the city's businesses in the 8th Street area sustained a majority of the damage within the business community. Damage to businesses outside the 8th Street area was considered minimal. Flooding that occurred on September 16, 1999 also heavily damaged or destroyed 626 single family homes and apartment units.

Passaic suffered significant flooding in the area of 8th Street throughout an industrial complex located at a bend in the Passaic River just below the confluence of the Passaic and Saddle Rivers. These businesses represented the following industrial sectors: manufacturing (mostly dyeing and packaging), construction, retail and wholesale trade, and transportation/utilities. None of the affected 8th Street establishments are among the 10 largest area employers.

Although flows on the Passaic River were not recorded to be near peak historic levels, the Saddle River did reach historic highs in both flows and flood elevations. Saddle River flows apparently contributed significantly to flooding along this section of the Passaic River, causing severe damage to equipment and inventory of a number of manufacturing industries at this location, including three of the four fabric dyeing companies in the complex. Employers reported that the

river rose to a depth of 3 feet to 4 feet above the elevation of their work floors at the peak of the flooding. They also reported that Hurricane Floyd resulted in the worst flooding they had ever experienced. The only previous flooding with a significant impact occurred in the 1970's. Even then, however, water levels in businesses affected were reported to have only reached 1 foot to 1.5 feet.

According to city officials, this industrial area employs approximately 500 workers. Major employers at the site include 4 fabric dye companies employing approximately 240 people. Vacancy rates are below 10 percent in this area. Two large parcels of land lie vacant in this area of the city; however, redevelopment is difficult due to hazardous waste issues on one site and flooding issues on the other.

City officials and officers of the fabric dyeing companies are very concerned about the impact flooding will have on the companies' ability to operate and maintain jobs. Several companies have moved to southern domestic or foreign locations. It will be difficult for these companies to make up for lost production because much of the market has already left this part of the country. If these firms go out of business or downsize, Passaic may not be able to replace these manufacturing jobs.

Nine of the 18 most severely impacted businesses in Passaic were surveyed. It is estimated that all businesses in Passaic that sustained damage were located in the 100-year floodplain.

### **The City of Paterson**

In the City of Paterson, one business received major damage and 30 others were affected. The EMC estimated total business losses at \$600,000. However, a month after the flood, city officials estimated that 60 firms had most likely experienced some flooding at their facilities. Approximately two-thirds of these 60 businesses were in the 100-year floodplain and the remainder were in the 500-year floodplain. Flood peaks on Molly Ann Brook, which joins the Passaic River in Paterson, were also moderate and were calculated to have a 21-year recurrence frequency at the North Haledon gage. Especially hard hit were the Northside and Hillcrest sections of the city and the Bunker Hill Industrial Park. Bunker Hill, a 10-block, densely developed industrial area on the banks of the Passaic River, contains more than 100 companies with over 2,000 employees in decades-old mill buildings. Companies in Bunker Hill Industrial Park enjoy the benefits of being in

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a State-designated Urban Enterprise Zone (UEZ). The area contains many manufacturing and wholesale operations, including a half dozen of the city's most prominent businesses. A number of industries in the immediate area suffered 2 feet to 4 feet of flooding over main floors, resulting in large inventory and equipment losses. The reconnaissance team surveyed 15 companies, ranging in size from 2 employees to 176 employees. One company surveyed is one of Paterson's largest employers.

The City of Paterson reported that four major businesses were affected in Hillcrest. A major employer that employed several hundred people, had minimal damage. Two other businesses and a restaurant experienced flooding, but were back in operation. Less than six businesses (scrapyards) were flooded and were back in operation in the Northside area.

### 6.2.1 Revenues Lost

#### **The City of Passaic**

All nine of the interviewees responded to the survey question about lost revenues. The total lost revenue reported by all respondents was \$1.5 million. If the implied loss rate is applied to the other 11 businesses that suffered major damage, lost revenue would total \$3.2 million. Reported annual revenue losses ranged from \$550 to \$1 million.

#### **The City of Paterson**

Twelve interviewees responded to the survey question about lost revenues. All respondents were businesses in the transportation/utilities or manufacturing sectors. Some businesses estimated lost revenues based upon the past week's revenues multiplied by the number of weeks they were closed or expected to be closed, and others used their expected revenues over the period they would be closed or partially operational.

The sum of lost revenues for 12 of the 15 businesses interviewed was \$510,000. None of the firms indicated that these losses would be insured. If this loss rate is applied to the total of the approximately 60 businesses flooded in Paterson, lost revenue could reach \$2 million.

A greater concern to many of the businesses is the possibility of losing long-held customers to competitors. A permanent loss of customers could result in future revenue losses.



### 6.2.2 Annual Taxes Lost

There may be a slight reduction in property taxes associated with reappraisals of commercial property affected by Hurricane Floyd. The amount of this reduction would be based on appraised values of specific properties and is therefore impossible to estimate at this time.

### 6.2.3 Number of Employees

#### The City of Passaic

Based on the responses received from the 9 business owners interviewed (45 percent of 20 impacted businesses), approximately 53 jobs were permanently lost due to the September 16, 1999 flooding. All of the lost jobs were in the manufacturing sector, in dyeing and packaging firms. If the reconnaissance team's survey sample is representative of the approximately 20 businesses impacted, an estimated 118 jobs were lost in Passaic as a result of the flooding. These jobs represent an estimated annual payroll loss of \$5.5 million. This estimate was based on New Jersey State 1997 first quarter wage per worker figures for the manufacturing sector.

#### The City of Paterson

Based on the responses received from the 15 business owners or managers who responded to questions of employment, no jobs were permanently lost due to the flooding. In the short-term, some employees were unable to work for up to 1 week; however, at many businesses, employees were back at work after 1 or 2 days, shifting their normal tasks to cleaning and restocking until the establishments were operational. Several firms brought in additional workers to assist the cleanup. No business indicated that wages would be withheld, even temporarily.

### 6.2.4 Structural Property Damage

#### The City of Passaic

All of the businesses surveyed were renting facilities at the time of the flooding. As a result, most did not have estimates of repairs to their rented structures. Only one respondent provided an estimate of the cost to repair structural damage to its facility. The estimate for this respondent, who was uninsured, was \$1,000.

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### **The City of Paterson**

The Bunker Hill Industrial Park consists of old, sturdily-built mill buildings that have been in use for close to 100 years. While structural damage to most buildings appeared to be minimal, six businesses surveyed estimated that their buildings had sustained damage. Damage ranged from warped floors to damaged foundations. Damage estimates ranged from \$5,000 to \$15,000 and totaled \$70,000. Most buildings were uninsured. Since 6 of the 15 businesses interviewed reported structural damage, it is estimated that 24 commercial or industrial buildings throughout Paterson could have structural damage and total losses could reach \$280,000.

### **6.2.5 Nonstructural Property and Equipment Damage**

#### **The City of Passaic**

All respondents claimed damages to nonstructural features. The combined total of reported damages to nonstructural elements of property was \$1.8 million. If the 9 respondents are representative of the population that suffered major damage (20 businesses), the total estimate to repair nonstructural damages would be \$4.1 million for all the heavily-affected businesses. The estimate of uninsured losses would be less because two of the businesses surveyed were insured, however, they could not provide an estimate of insured losses at the time of the survey. The potential for tenants having to pay higher rental fees because of more demand and less available space is not included in this estimate. In addition, rebuilt structures may also have higher rents to help cover reconstruction cost.

#### **The City of Paterson**

The owners/managers of 11 businesses were able to estimate nonstructural property and equipment damage. The total combined estimate for these respondents was \$860,000, most of which would not be covered by flood insurance. Four respondents indicated damages would total \$100,000 to \$250,000. If these 11 businesses are representative of the population of affected businesses, the total estimate to repair nonstructural property and equipment damage could reach \$3.5 million for all impacted businesses.

### 6.2.6 Inventory Damage

#### The City of Passaic

Seven respondents estimated the value of their lost business inventory (e.g., stock) at \$4.3 million. The remaining two respondents reported no inventory losses. If it is assumed that the nine respondents represent the entire population, then the total estimated loss associated with inventory is \$9.6 million. The estimate of uninsured losses would be less because two of the businesses surveyed were insured; however, they could not provide an estimate of insured losses at the time of the survey.

#### The City of Paterson

The owners/managers of nine businesses estimated damage to their inventory. The total combined estimate for these respondents was \$330,000. Extrapolating this figure to all 60 businesses results in an estimate of \$2.2 million.

Several businesses were concerned because the damaged inventory was not their own. It was owned by their customers, who were having the product treated. None of the businesses knew whether these losses would be insured, so a discount of inventory damage was not made for insured losses. One company treated and stored special fabrics. These fabrics were considered irreplaceable and therefore their value could not be estimated. It is unclear whether these competing factors would result in higher or lower inventory losses than the \$2.2 million estimate.

### 6.2.7 Utility-Related Losses

#### The City of Passaic

Only one owner/manager reported that the loss of electricity and phone service prevented his business from reopening immediately. Even though some businesses reported disruptions due to infrastructure problems, most were solved within 2 weeks of the flooding. Some problems reported immediately after the flooding were telephone service disruptions and power outages. Only one business indicated continuing problems with telephone service.

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### **The City of Paterson**

All respondents claimed revenue losses due to the lack of telephone service. All businesses were open before telephone service was fully restored, yet receipts were low because these businesses rely on telephone and fax service for sales.

The Bunker Hill area had no electricity for 1 week after the floods. This made cleanup efforts, as well as resumption of work, more difficult and contributed to revenue losses.

Owners/managers of businesses did not report any other utility-related losses.

### **6.2.8 Business Reopenings**

#### **The City of Passaic**

All nine owners/managers interviewed had already reopened their businesses. Five businesses were fully operational; the remaining four were partially operational. Of the partially operational businesses, three were 80 to 90 percent operational, while one reported resuming operations at a 15-percent level. Two of the fully operational businesses reported remaining closed for 7 and 10 days, respectively, after the flooding.

#### **The City of Paterson**

Floodwaters receded quickly, allowing business owners and employees to enter their facilities to assess damages and begin cleanup operations. All 15 interviewed businesses were reopened 1 month after the flood. Paterson officials knew of no businesses which had ceased operations since the flooding. While 5 businesses were 100 percent operational, 10 businesses were partially operational (less than 50 percent compared to pre-disaster conditions).

As mentioned previously, many businesses were concerned about the loss of customers. The permanent loss of customers could result in future business closures.

### **6.2.9 Rebuilding or Relocation**

#### **The City of Passaic**

Only two of the nine businesses interviewed were considering moving to another location. One business owner indicated that he would consider

moving within the commuting area (30 miles), and another indicated moving to another location if he was to remain in business.

### The City of Paterson

Seven of the 15 respondents indicated the possibility of relocating from the area to avoid future flooding. Five indicated they would consider locations outside of Paterson.

### 6.2.10 Category and Value of Economic Loss

Table 6-4 summarizes the economic effects of flooding in Passaic and Paterson. When jobs are lost as a result of a disaster to a business (as opposed to a strategic move to consolidate positions or locations), staff layoffs typically result in lost revenue. Therefore, payroll losses are embedded in estimates for lost revenue and adding payroll losses to revenue losses would be double-counting the former. This does not trivialize the significance of the loss of these jobs to the employers or to the workers themselves. Indeed, the loss of such jobs to any residents of flooded communities makes the business community's full recovery that much more difficult.

**Table 6-4 Summary of Economic Losses – Cities of Passaic and Paterson**

Category of Economic Loss	Value of Loss [\$]	
	Passaic	Paterson
Revenue Losses	3,200,000	2,000,000
<i>Payroll Losses</i>	<i>5,500,000</i>	<i>0</i>
Structural Property Damage	1,000	280,000
Nonstructural Property and Equipment Damage	4,100,000	3,500,000
Inventory Damage	9,600,000	2,200,000
Total (excluding Payroll Losses)*	17,000,000	8,000,000

\* Totals were rounded to two significant digits.

### 6.3 Conclusions

Manufacturing is one of the two largest employment sectors in Passaic County. It has played a long and historic role in the economy due to the agglomeration of firms taking advantage of the area's strategic location near the Passaic River and the community's worker base.

Manufacturing jobs are tenuous as this sector continues to globalize and turns to contract labor. Service industries have taken the lead in generating new jobs in Passaic County as the manufacturing sector has declined.

Economic losses from the flood in Passaic County's manufacturing community had added new strains on this vulnerable sector.

Aggregated data for the county show 473 businesses impacted by the storm. Most substantial damage, however, was concentrated in the manufacturing districts within the Cities of Paterson and Passaic.

Permanent losses in the manufacturing sector would be devastating to the county because of the loss of decent-wage paying jobs and difficulty in attracting new firms.

#### 6.3.1 City of Passaic

At the time of Hurricane Floyd, Passaic's unemployment rate was 9 percent. Like the rest of New Jersey, Passaic is undergoing a transition from a manufacturing-based economy to a service-based economy. However, economic growth in the county is expected to lag behind the rest of the State due to the current and historical importance of manufacturing. This lag could be amplified as a result of the September 16, 1999 flooding.

Direct revenue losses were no more than 0.6 percent of annual revenues for Passaic's businesses. Direct payroll losses were approximately 1.4 percent of annual payroll for the businesses in the city.\* Structural property damage was approximately 1.1 percent of real property values of Passaic's businesses. These direct losses are considered a negligible impact to Passaic's business community.

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\* Annual revenue and annual payroll were based on 1992 and 1996 data, respectively. Although these figures were adjusted to 1999 dollars, they do not account for any economic growth that may have occurred in the community between the time the data was recorded and 1999. Therefore, compared to annual revenue and annual payroll, the actual percentages are expected to be less than reported. In addition, annual revenue was based on only three industry sectors (services, retail trade, and wholesale trade); the percentage of annual revenue lost to the disaster was therefore less than estimated.

Fabric dyeing and finishing companies lost equipment, inventory, and customer goods as a result of Hurricane Floyd. Flood losses to these companies, which already face competitive demands from southern domestic and foreign markets, has put additional pressure on these firms to remain solvent. City officials and officers of the fabric dyeing companies are very concerned about the impact the flooding will have on the companies' ability to operate and maintain jobs. It will be difficult for these companies to make up for lost production since much of the market has already left this part of the country. If these firms go out of business or downsize, Passaic may not be able to replace these manufacturing jobs. The recommendations for the City of Passaic listed in the following section will be helpful in retaining manufacturing jobs in the Passaic area, as would many of the general recommendations listed in Section 3.4.

### 6.3.2 City of Paterson

Paterson is the third largest city in New Jersey. As the first planned industrial city in the nation, Paterson has a long history as a manufacturing-based economy and its manufacturing industry is still strong. Direct revenue losses were no more than 0.2 percent of annual revenues for Paterson's businesses.\* Structural property damage was approximately 0.4 percent of real property values of Paterson's businesses. These direct losses are considered a negligible impact to Paterson's business community. No payroll losses were reported.

Flooding in the Bunker Hill Industrial Park affected as many as 60 of the 102 firms within the park. Most of these firms were manufacturers. The reconnaissance team surveyed 15 companies with damages ranging from minor to major. While no company appears to have ceased operations as a result of the floods, the level of operation varied among the companies. Many had just finished cleaning up their facilities and were assessing inventory damage. Some of the damaged inventory was considered to be irreplaceable and most of the losses were uninsured. Of greater concern was the loss of customer base,

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\* Annual revenue was based on 1992 data. Although this figure was adjusted to 1999 dollars, it does not account for any economic growth that may have occurred in the community between the time the data was recorded and 1999. Therefore, compared to annual revenue, the actual percentage is expected to be less than reported. In addition, annual revenue was based on only three industry sectors (services, retail trade, and wholesale trade); the percentage of annual revenue lost to the disaster was therefore less than estimated.

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which could slowly erode the companies' viability. Over half of the companies surveyed said they would consider leaving the industrial park for other sites. Some would consider moving within the city while others would consider relocation out of the area. It is important to note, however, that occupancy in Bunker Hill Industrial Park is approximately 100 percent. Businesses choose to locate there because of the low-cost rents, solid construction of buildings, improved security, and other services of the park's managers and benefits associated with the UEZ. It is likely that any flood-related closures would soon be filled by new tenants.

The city expressed concern about the anticipated decrease in tax revenues and the loss of businesses and jobs.

While the chance of permanent business and job losses in Paterson is small, any of these losses should be avoided as much as possible to avoid further decline in a city already experiencing long-term economic stagnation. In addition to general recommendations in Section 3.4, Paterson officials should review the specific recommendations in Section 6.4.2.

## 6.4 Recommendations

### 6.4.1 City of Passaic

**(a) Consider implementing nonstructural flood mitigation.**

The city should consider opportunities that may exist to implement nonstructural, flood damage mitigation strategies for industrial buildings suffering most recently from flooding along the Passaic River. The industrial facilities damaged in Passaic are located in a relatively limited area. Based on interviews with businesses, a majority of damage occurred within an industrial complex that housed a number of fabric dyeing and finishing operations. It may be possible to protect this complex and other surrounding industrial buildings through nonstructural flood protection strategies, including flood barriers, floodproofing, flood warning, and public education.

The city should review existing flood studies to evaluate the need for revision. New peak record flows discharging into the Passaic River from the Saddle River contributed significantly to flood damages in the vicinity of 8th Street. However, potential flood flows along the Passaic River could be much greater. Mitigation strategies to protect Passaic from flooding are considered in the Passaic River Flood Damage Reduction



Study developed by the New York District of USACE, as discussed in Section 6.1.2. If a revision, based on recent storm data, is not necessary, the city should use the study as a resource to assist in prioritizing flood control measures most suited to the city. Nonstructural mitigation strategies are outlined in Section 3.4.2 (a).

- (b) Implement disaster-resistant development.** A significant opportunity exists for the city to implement disaster-resistant development, which is described in Section 3.4.2 (a). Two tracts of land are available for redevelopment in the city. Development contemplated at this location could follow the principles of structure elevation, floodplain storage preservation, and flood warning and education. Development of this site may also provide an opportunity for the city to encourage abandonment of the most floodprone buildings and relocation into a better prepared, redeveloped area.
- (c) Create disaster-resistant areas for relocation of frequently flooded businesses.** One tract of land is available for redevelopment in the 8th Street area. The City of Passaic and its Community Development Director would like to attract manufacturing and retail facilities to the area. The City of Passaic could request Federal and State funds, such as programs outlined in Appendix A, to build a Textile and Apparel Technology Center modeled after the one NJEDA created on Route 1 between Rutgers and Princeton Universities. The facility would be designed to attract high-tech textile and apparel manufacturing establishments. These businesses could receive financial assistance from NJEDA and technical assistance from the New Jersey Commission on Science and Technology. Tenants of the technology center would benefit from the proximity of the fashion, textile, and apparel industries in New York City. Textile businesses currently in Passaic may also benefit from the agglomeration economies that typically accompany a new technology center.
- (d) Provide technical and financial assistance for businesses.** Based on interviews with the major employers in the manufacturing area that suffered flood damages, the following actions outlined in the noted general recommendation sections should be closely considered: business assistance programs including grants, tax credits, and tax relief (Section 3.4.3 (b)); actions that protect businesses that rent their premises (Section 3.4.2 (b)); and incorporation of businesses in local economic recovery planning efforts (Section 3.4.1 (c)). Passaic's Community Development Director recommended the State postpone or extend the UEZ phase-out provisions because he is concerned about the future viability of businesses currently being phased out of the UEZ.

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### 6.4.2 City of Paterson

- (a) **Implement nonstructural flood mitigation.** Consider opportunities that may exist to implement nonstructural flood damage mitigation strategies for industrial buildings suffering most recently from flooding along the Passaic River. Industrial facilities damaged in Paterson are located in a relatively limited area. Based on interviews with businesses, a majority of damage occurred within one industrial area housing a number of textile operations. It may be possible to protect this complex and other surrounding industrial buildings through nonstructural flood protection strategies, including flood barriers, floodproofing, flood warning, and public education. General mitigation strategies are outlined in Section 3.4.2 (a).

One specific mitigation plan the city has developed is the “Passaic River Greenway” proposal, a project that calls for open space and parkland creation along the Passaic River. This proposal requires funds for planning the greenway, acquisition of property, construction of bike trails and landscaping, and enhancement of the Great Falls area for recreational opportunities. This plan would enhance appreciation of the river and remove development from the floodplain. The city should seek Federal, State, and/or private investment to support this proposal, especially from public agencies which fund mitigation activities such as buyouts, relocation, and long-term recovery and serve to stimulate private investment by assembling and preparing real estate for key development projects. Federal and State agencies should support this project.

- (b) **Consider disaster-resistant development of unused land.** Almost half of the businesses surveyed indicated that they would consider relocation of their operations to avoid future flooding. However, no industrial land remains in Paterson for new development and almost no vacant buildings are available for relocation. Therefore, some businesses would be forced to leave Paterson. The New Jersey Department of Transportation (NJDOT) presently owns approximately 10 acres of land in Paterson. The land was acquired and cleared for a proposed road that was never constructed. This property still remains vacant and unavailable for development. The city should work with NJDOT to release this property to the City of Paterson for economic development purposes. Disaster-resistant development is described in Section 3.4.2 (a).
- (c) **Evaluate the storm sewer system.** The City of Paterson should examine the condition of its storm sewer system and consider upgrades in flooded sections. The city should coordinate upgrading the storm sewer system into its

economic plan. Potential sources of financial support include programs that provide funds for local public infrastructure projects or public services, public facilities, and improvements. In addition, programs that implement cost-effective, environmentally sound, long-term mitigation measures that substantially reduce the risk of future damage and loss of life from major disasters may be available.

- (d) **Mitigate against future flood damage.** The use of funds to assist businesses to mitigate against future flood damages are described in Section 3.4.2 (a).
- (e) **Determine flood control measures best suited to the city.** The remnants of Hurricane Floyd did not impact the Passaic River in the vicinity of Paterson as significantly as they impacted some of the other major watersheds and rivers within the State. Therefore, city-wide flood damages resulting from Floyd were not large compared to the potential flood damages that could have been incurred. As described in Section 6.1.2, mitigation strategies to protect Paterson from flooding are considered in the Passaic River Flood Damage Reduction Study that the New York District USACE developed. Paterson should use this study as a resource to assist in determining flood control measures best suited to the city. General mitigation strategies are discussed in Section 3.4.2.

